Computers and Special Ed

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Spreadsheets: A powerful tool to help special education students learn to solve problems

by Michael Brandmeyer

In the Special Education Classroom of the Future at Shrewsbury High School we prefer to use the computer as a tool for learning.

We believe that by using tool software such as word processing, databased management systems, and spreadsheets, our staff and students have greater control over curriculum and assignments than they would have using commercial software.

In my years of teaching math to learning disabled students I have always felt that the reasons for students' hesitation to learn problem-solving was their inability to organize information, and the frustration they experienced with incorrectly calculated math operations.

What's inside

3 - **Students write their own programs**
4 - **Who uses a computer . . . and why**

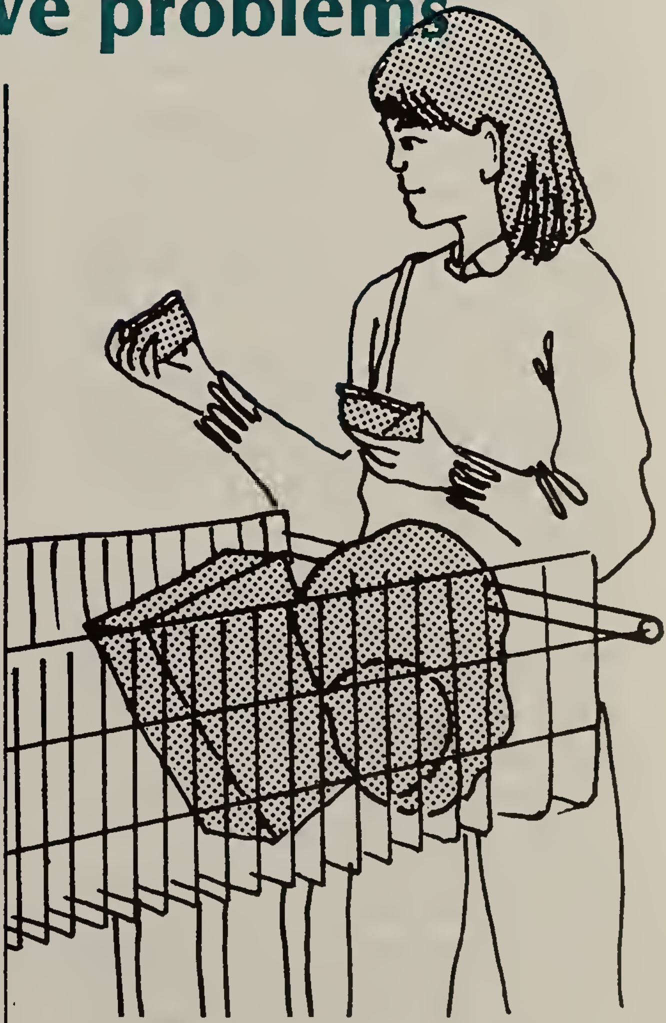
Learning disabled students at Shrewsbury High are using Appleworks Spreadsheets to solve real-life problems in their math classes.

The advantages of using spreadsheets include:

- Students must organize and record the information needed to solve the problem.
- Students must progress sequentially, a critical step in solving multi-step word problems.
- Students must develop problem-solving strategies using words and questions instead of numbers, a process which leads to a better understanding of the problem.
- Students are able to "teach" the spreadsheet how to solve the problem, therefore they are freed from the actual calculations and are able to spend more time learning to apply mathematical operations.

When I am teaching students to solve word problems, I prefer to use "real-life" situations instead of commercial word problem packages. I use the proven five-step approach of:

1. Read the problem.
2. Identify the information presented.
3. Identify the question(s).
4. Select the necessary operation(s).
5. Solve the problem.



Using the spreadsheet is a natural extension of this process that forces the student to proceed in an orderly, step-by-step fashion.

To get started I present the students with a multi-step word problem about a shopping trip involving subtotals and change. After reading the problem they usually give me that confused stare that says, "Where do I begin?" and I can see "calculation anxiety" set in. At this point I tell them that we are going to use a spreadsheet, which is like an automatic calculator, to help solve the

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Spreadsheets:

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problem. They discover that the spreadsheet is an organizer, record-keeper,and calculator.

After reading the problem we identify important information. The students learn that they must write a description (label) for each number (value) they want to enter in the spreadsheet. The next step is to formulate a question, preferably in their own words, and enter this into the spreadsheet. Initially I write the formulas for the problems and once they experience the automatic calculations they are "hooked."

My experience has been that the students are so motivated by the computer and so interested in solving all of the problem on their own, that they quickly learn to write the formulas themselves. The students think it is great because "the computer does the division." I think it is great because they are on their way to developing real problem-solving skills.

The critical transfer that the students must make is learning to apply the organizational skills they learn to solving word problems using paper, pencil and pocket calculator.

To integrate problem-solving with spreadsheets into the curriculum, the teacher must make some critical decisions about which spreadsheet to use and how many of the spreadsheet functions to teach. After reviewing Visi-calc, Ed-u-calc and Appleworks, I chose to use Appleworks for three reasons. First, I could have a program for each computer station (students usually work independently at their own station). Second, I found Appleworks is the easiest for entering information, making corrections, writing formulas, and moving the cursor from cell to cell. Third, Appleworks allows the teacher many options to help the students. These include protecting cells for words only (labels) or numbers only (values), flexibility for layout with money (dollar signs, and correct decimal places), automatic or manual calculaions, and adjustable column width.

In deciding how many spreadsheet functions to teach, I chose to use simple definitions to explain cell, row, column, label and value. I also demonstrated how to move the cursor, enter information, and make corrections. The rest of the necessary spreadsheet commands (blanking entries, layouts, printing, and writing formulas) were taught to students on an individual basis as they were ready to learn the next command.

The content and number of steps for each problem becomes progressively more and more involved as students become more adept at using spreadsheets.

Initially, students are presented with single-step problems and use spreadsheets prepared with labels and formulas. Students eventually develop to the point of preparing their own labels and writing their own formulas.

I have found it very helpful for students to plan their work on "paper spreadsheets" before entering information into the computer. This has helped to alleviate some of the frustration the students initially feel until they become comfortable with spreadsheets.

Using spreadsheets has allowed the students to become independent learners with the ability to solve multistep word problems. They are able to enter information and develop formulas on their own, which is a real signal that they are developing problem-solving strategies and thinking skills. Students are comfortable, are motivated to solve word problems, and are even asking for homework.

This application of a regular computer tool has allowed me, as a teacher, to present real-life situations where students must apply math operations to analyze situations they will probably face at some point in their adult life. ■

Michael Brandmeyer is a special needs teacher at Shrewsbury High School.

CCOD acquaints disabled with computers

The 27,000-member Boston Computer Society has a new public service—the Center for Computer Opportunities for the Disabled.

CCOD enables individuals with special needs to explore the ability of computer technology to improve the quality of their lives. They, their family, friends and care-providers can learn informally about computer systems, hardware, peripherals, adaptive devices and software. Computers are available to experiment with.

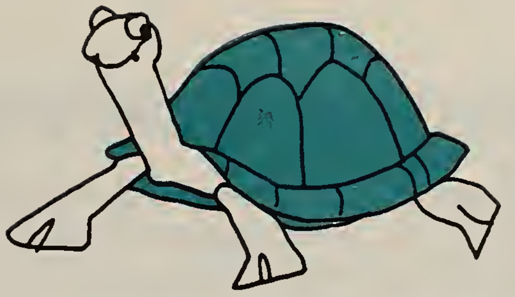
CCOD has two locations: at the Carroll Center for the Blind, on Centre Street in Newton, and at Computerplace in the Boston Museum of Science, in downtown Boston. Both sites are equipped with computers, adaptive devices, and software. Both buildings are wheelchair-accessible and provide free parking, and both can be reached by car, MBTA and its lift bus, and THE RIDE. There is no admission charge at the Museum of Science when individuals are using CCOD.

The Carroll Center serves persons whose primary disability is visual impairment. The Computerplace/Museum of Science location serves persons with other special needs.

CCOD is available only on an appointment basis so that a trained volunteer can have a computer set up with appropriate adaptive devices and programs. Each individual will be seen by a volunteer whose training matches that individual's needs.

CCOD is open on Sunday afternoons and one evening a week. To make an appointment call Arthur Wood, (617) 244-7607, and leave your name and phone number. A volunteer will return your call to obtain specific information and to arrange an appointment. ■

Special needs students write their own programs



by Marjorie Johnston

Yes, computers are terrific tools for teaching—but they do generate problems which teachers have to solve.

Several problems have come up at our school while using the computer with attention-deficit and profoundly developmentally delayed students. Mainly the problems are due to the students' behavioral characteristics.

In our work with students in Grades 5 to 8 at the Beckwith Middle School in Rehoboth, we find that a difficulty arises in use of hardware, due to the time it takes for the program to be loaded into the computer. During those few minutes the students lose interest in the whole process and start to attend to other students or activities in the room. And once off-task, these students have trouble regaining their direction and interest.

Therefore we have gone to direct programming by the students themselves, as a way of learning to use the computer. LOGO (MIT version) puts the computer under the students' control at all times and helps them work on sequencing and logic. In addition, we use Margaret Zuanich's and Susan Lipscomb's "Basic Fun with Graphics" and Tony Fabbri's "Animation Games and Sound" for the Apple II and IIe. LOGO plus these software packages keep students interested and require their complete attention to the work being done. When the students write a program and see the result on the screen, it is an "aha" experience for them.

The problem of students being able to pay attention also has another aspect: students' expectations. They believe that computers will give answers to all questions given and all requests made. They think that computers are for action games, not for head-thinking work.

We address the first concern, their expectations, by having them do LOGO programming, as we mentioned, and the second, games, by using the computer games only as rewards after work on school-related tasks is completed. (By games I mean the arcade type, not the usual educational games which often do not have enough action to hold students' interest.)

Other problems we sometimes encounter, depending on the individual student's disability, involve 1) our students' low reading level, which makes it difficult to use prepared programs, and 2) the students' inability to attend to, retain and understand directions.

The solution does not lie in using programs that are non-verbal, such as those for pre-kindergarteners or first graders. The content of these programs is too basic for our students, who, despite their disabilities, are very aware of the level of work being done by other children in the fifth to eighth grades.

What, then, is the solution? One that we have used is to copy the information and directions needed onto a large file card. We suggest that you laminate the card if you have the equipment. Then, the students have it in front of them as they use the program.

Our students' use of programming has yielded two benefits: It increases their vocabulary of words that are used in the programming process, and demands their concentration on the correctness and sequence of the written words. We also find that having the students use a printer to produce their creations, either graphics or prose, sparks their interest in reading and writing.

We find that the students are much less frustrated by the difficulties of writing programs than they are by not being able to read prepared programs.

Our students really love to use computers. Adjusting our teaching to accomodate their particular needs has enabled our students to have a reasonably frustration-free experience. If you have suggestions or refinements that would assist us, we would like to hear about them. ■

Marjorie Johnston is a special education teacher in Rehoboth.

NCEG goal: To help the nonspeaking

Are you interested in topics such as "The Parent's Role in the Transfer of Technology to the Disabled User"? If so, you'll be interested in joining NCEG, which publishes a newsletter devoted to issues such as this one.

The Northeast Communication Enhancement Group is a nonprofit organization that brings together consumers, parents and professionals who are interested in improving the communication of nonspeaking individuals.

The group's activities include education, dissemination of information, and advocacy involving issues related to nonspeaking persons and augmentative communications systems.

NECG gives its members newsletters, reduced rates for publications, special mailings, advance notice or discounts on NCEG-sponsored seminars and workshops, and a discounted membership in ISAAC — International Society for Augmentative and Alternative Communication.

The price is $10 a year for NCEG, or $30 a year including membership in ISAAC. For information: NCEG, P.O. Box 241, Winchester, MA 01890. ■

Survey shows who uses a computer—and why

Most Massachusetts schools that have computers use them in special education, a survey indicates.

The survey was conducted by Dr. Joan Thormann, a consultant in computer technology at the Massachusetts Department of Education, Division of Special Education. It involved sending a form to directors of special education in 313 school districts. Questionnaires were returned by 228 districts, which represents a response rate of 73 percent. The results showed that 90 percent of the responding districts—205 —use computers in their schools, and 196 of these use computers in special education.

The survey, conducted in the spring of 1985, also yielded information about administrative and instructional use of computers, type of equipment used, priorities for future applications, and interest in using an electronic mail and bulletin board system.

Among the findings:

—Of the 228 districts, 160 use computers for administration or for purposes of office automation. On the average, this type of application has been used for 1.3 years. The range of time is from "just starting" to nine years.

—Most of the districts use microcomputers, as opposed to a mainframe computer, for administrative work; 96 use the Apple II or IIe. Other microcomputers used are the TRS-80 (11), IBM (7), Atari (5), DEC and Commodore (3 each). Twenty-two of the districts use both microcomputers and mainframe systems to do administrative work.

—Almost all districts that use microcomputers have at least one printer. The most popular is the Epson. Six other brands also were listed: Apple Imagewriter, Okidata, Itoh, NEC, IBM, and Commodore.

—Computers are used for many administrative purposes. The most popular are maintaining the Handicapped Register and for generating state reports, but there is a wide variety. For example, MASBO, the most popular administrative system, is used for generating IEPs, the Handicapped Register, and state reports. (See the accompanying table for specifics.)

—Several districts developed their own administrative system, using word word-processing programs, data-based management systems adapted to district needs, or, in some cases, a program developed by data processing using a mainframe.

—166 respondents (53 percent) reported that they use computers for instruction. The average length of time the computers have been used for instruction is 1.5 years. Some districts have just gotten started; others have been using computers for instruction for as long as as 10 years.

—131 respondents said they use computers for both instructional and administrative purposes; hence, a very small number of the districts use their computers solely for either administration or instruction.

—About two-thirds of all the respondents (165) use microcomputers for instruction, as opposed to mainframes. Most of these districts (125) use the Apple II or IIe. Only 11 districts said they use both micros and mainframes for instruction.

TABLE 1

Districts are using computers for a variety of administrative tasks.The table shows the number of districts using each specific application, the brand names of software packages and the number of districts using each brand for for each application.

No. of Districts	Type of Use	Brand name or Company (number of each)
85	IEP Development	MASBO (28), Edcom (17), IFB (9) ED Systems (8), District (9), others (12)
117	Handicapped Register	MASBO (36), District (26), IFB (8), Ed Systems (10), CCA DBMS (6)
115	State Reports	MASBO (35), District (30), Edcom (8), IFB (8), Ed Systems (10), CCA DBMS (5)
56	Budget	Visicalc (14), District (14), others (28)
31	Scheduling	
13	Telecommunications	
23	Other	

Brands referred to as "District" were developed with word processing programs, data-based management systems adapted to district needs or, in some cases, a program developed by data processing using a mainframe within the district.

—81 districts reported they have printers available for instructional purposes.

—89 districts said they have computer coordinators; 74 said coordinators assist special education staff.

—130 districts already using computers indicated they planned to buy additional hardware for administrative use during the next 12 months. And, 102 districts are planning to buy additional hardware for instructional use during the next year. The microcomputer both groups most often indicated they intended to buy is the Apple.

—Asked to indicate additional applications they would like to see their district implement, the special education directors give the highest priority to computerized IEPs (see accompanying chart). The second highest priority is word processing, followed by state reports, tutorials, and the Handicapped Register.

—171 sped directors indicated they are interested in using an electronic mail and bulletin board system.

TABLE 2

This table shows the extent to which computers are used for instruction in a specific application. Numbers in parentheses show the rank order of the responses.

	Hardly Ever Or Not at All (less than twice a year)	Occasionally (by some staff about once a month)	Fairly Often (by some staff about once a week or more)
Drill & Practice	3	33	124 (1)
Tutorials	6	38	92 (3)
Simulations	27	34	48 (6)
Games (academic)	4	45	98 (2)
Games (extra-curric)	24	33	53 (5)
Programming (by students)	40	40	23
Programming (by teachers)	45	30	23
Authoring Languages	56	14	12
Word Processing	22	23	78 (4)
Others	1	3	8

The table shows a trend similar to trends in other states. Drill and practice seems to be the most popular use in special education followed by games for academic use, tutorials, word processing, games for extra-curricula activities and simulations. However, there is a rise in use of word processing and programming by students and teachers. Previous studies have not shown such wide use of word processing and very little use of programming.

TABLE 3

This table shows the priorities for users. (1 is high, 5 is low and 0 represents a checkmark without indicating a priority. Numbers in parentheses indicate the rank order of the responses.

	1	2	3	4	5	0
IEP Development	58	14	9	5	8	9 (1)
Handicapped Register	11	22	7	2	6	5 (5)
State Reports	18	12	17	2	7	7 (3)
Scheduling	3	8	8	6	7	5
Budget	10	9	17	21	9	5
Telecommunications	8	6	7	6	4	10
Drill and Practice	10	12	8	8	9	8
Tutorials	10	19	12	16	12	0 (4)
Simulations	3	3	7	7	9	6
Games (academic)	1	3	9	12	6	5
Games (extra-curric)	1	0	2	1	2	3
Programming (by students)	3	8	3	5	9	5
Programming (by teachers)	3	5	12	4	12	4
Authoring Languages	2	2	3	6	3	3
Word Processing	23	19	11	8	19	9 (2)

Computerized IEPs are the highest priority for computer use by Special Education Directors. The second priority is word processing, followed by state reports, tutorials and the handicapped register.

Special needs group meets in Cambridge

Have you heard about the Talking Textwriter, which uses the Echo speech synthesizer? Are you interested in learning how to integrate software into the curriculum? You can learn about such topics at meetings of a group called "Micros and Special Needs." The members are educators in the Boston area interested in using microcomputers in special education.

The group meets monthly at the Technical Education Resource Center (TERC), 1696 Massachusetts Ave., Cambridge. It includes teachers from public and private schools, university faculty members, administrators, researchers, and a representative from the Massachusetts Department of Education.

The group discusses common concerns, hears invited speakers, and shares information about software. A library loans software to teachers to try in their classrooms. Some members are involved in special projects that focus on particular kinds of software such as data bases and Logo.

Two other activities at TERC are aimed at helping special educators:

- A field study course has been established as part of the Lesley College Graduate School program in computers and special education. It is expected to be offered again next spring. Persons who are currently teaching do their field study in their own classroom; placements in various special education settings are available to persons who are not teaching. For information call Rebecca B. Corwin at (617) 868-9600 or write to her at Lesley College Graduate School, 14 Wendell St., Cambridge, Mass. 02238.
- A "Handbook for Special Educators," which deals with the use of computers with learning and emotionally disabled students, is being prepared for publication. The book will draw on the work of teachers throughout the country who are using learner-centered software with special needs students. To reserve a copy write to Peggy Kapisovksy, TERC, 1696 Massachusetts Ave., Cambridge, Mass. 02138. (The book will be available commercially but the cost has not been determined at this writing.) ■

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Self-esteem grows at Hampshire Collaborative

by Siri Nam Khalsa, M.ED.

For the past three years, the use of microcomputers has been an integral part of my classroom curriculum. In teaching and coordinating programs for mentally handicapped teenagers who had little or no previous experience with computers, I have seen computer-assisted instruction foster growth in self-esteem.

Psychological studies indicate that unless our need for self-worth is satisfied, the fulfillment of more expansive needs—creativity, achievement, reaching one's full potential—is limited.

I have observed use of the computer to be very effective in reinforcing a positive learning cycle. An example of the way this cycle works, in the context of computer-assisted instruction is: first, Peter has a thought and feeling about himself, "I can or want to learn new things,"and second, he engages in an activity on the computer chosen with the assistance of a teacher who ensures that the program is at an independent or instructional learning level. The computer gives him accurate, objective visual and auditory feedback on his successful performance and learning.

Finally, Peter feels the consequences of succeeding, thinking, "I learned a lot by completing the activity and not giving up. I'm even more confident of my abilities".

John who has minimal use of one hand, has learned to use word processing as a tool to write letters and even sections of his own IEP. The word processing program my students use is "The Bank Street Writer" by Scholastic.

The on-disk tutorial was useful for John who needed step by step instruction and immediate feedback. John now teaches other students how to use the word processor. Being able to help others has improved John's self-confidence.

Staff psychologist, Dr. Joel Levine, observes, "Computers occupy a prominent place in our increasingly technologically oriented society. The enthusiasm with which special needs adolescents participate in this form of instruction is, in part, the result of how they see computers being valued in the greater culture. The effect is to make those students feel like participants in the mainstream rather than outside the range of 'typical' educational achievement."

Teachers and parents can influence students' self-esteem by modeling, and by organizing new experiences that support a strong sense of uniqueness, power and connectiveness. It's not unusual to observe once reluctant students become totally engaged in using a

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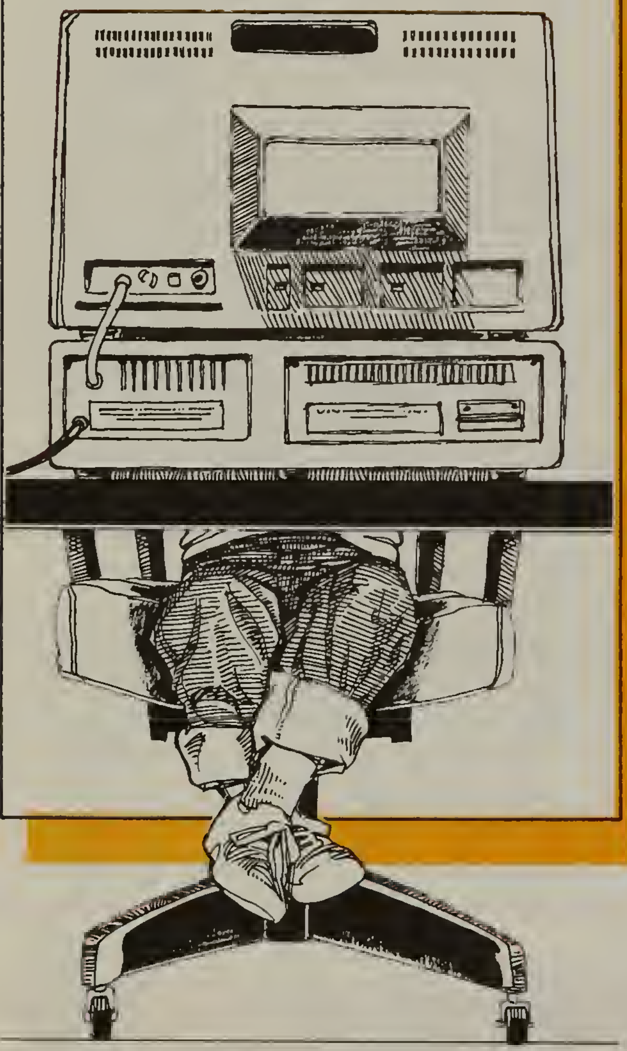
Special needs and computers: some answers



by Tim Dubuque

Since all people have differing needs and abilities, there is always more than one possible solution to accessing computers. Following are some examples of needs and solutions.

QUESTION: I'm a special education teacher working with children in primary school who have severe physical disabilities Many of my students cannot use a keyboard or read. How can the computer help them?

ANSWER: Software which addresses the needs of pre-reading students in a variety of ways is available. These students can use software to develop cause and effect relationships, increase visual, color, letter and number discrimination skills, attention span and language development. There are also a variety of alternative input methods which can take the place of the keyboard and allow access to the computer. Input devices such as, single switches, expanded keyboards, touch screens, speech synthesizers and more can be used.

QUESTION: I'm a teacher working in a primary school computer resource room. I want my students to take advantage of the computer and our software but some have too much trouble using the keyboard. Is there an easier way?

ANSWER: One solution might be to use the Unicorn expanded keyboard, which is an alternative to the standard keyboard. This large, flat, touch sensitive keyboard combined with the adaptive firmware card, will also enable you to customize overlays to limit visual stimuli to only those keystrokes or commands needed for specific programs.

QUESTION: I'm a 28 year old accountant and cannot use my hands due to a recent auto accident. Is there any way I can continue my work?

ANSWER: One solution may be the Headmaster Workstation from Personics. This unique head controlled device allows direct input with minimal head movement and a puff switch (control by breath). Headmaster runs word processing, spreadsheet, and database applications.

QUESTION: Due to a recent spinal cord injury my ability to use my hands and perform other movements is severely limited. I still speak well and would like to access a computer for recreation and home management. Is there a way to do this?

ANSWER: You could use a voice recognition system combined with an Apple IIe to allow direct input by speaking into a microphone. Your voice is then interpreted by the computer and keystroke characters are entered.

It is likely you will have other specific questions of your own. If you do, write to COMPUTERS IN SPECIAL ED and we will try to answer your questions or will print your questions in the newsletter and ask our readers to respond. ■

Tim Dubuque works at Personal Computer Resources in Norwell. Previously Tim worked with special needs students in schools, clinics and rehabilitation centers and used computers to address some of these students' needs

TURN YOUR COMPUTER ON THIS SUMMER

The COUNCIL FOR EXCEPTIONAL CHILDREN invites you to attend an Academy for Effective Computer Use with Mildly Handicapped Students to be held at the Boston Park Plaza Hotel and Towers from July 27 -29.

The course Microcomputer as an Instructional Tool will explore the relationship between stages of student learning, and use of computerized instruction.

The course will focus on teaching math skills and language arts subjects, primarily writing, via the computer. Emphasis will be placed on analyzing where in the learning process the computer can be used most effectively.

Participants will develop practical strategies for integrating computer software into the curriculum based on realistic constraints such as, limited microcomputer equipment found in most schools.

Topics will include effective integration of computer use for math drill and practice, math problem solving, word problems, vocabulary and spelling, keyboarding skills, word processing and low cost networking to monitor instruction.

Fees range from $95 to $240 dependent upon CEC membership and student status.

For more information write or call the Department of Professional Development, CEC, 1920 Association Drive, Reston, VA 22091 (703) 620-3660.

EMMANUEL COLLEGE CONTINUING EDUCATION PROGRAM presents four courses designed for educators interested in using computers.

One course titled "Computers and the Special Needs Student" meets July 20-July 24 and provides an overview including topics such as, adaptive and augmentative devices, models of implementation, software use and evaluation, LOGO, databases, word processing and graphics utilities.

Other courses are:

BASIC Intensified
June 29-July 3
Integrated Software Applications
July 6-July 10
Telecommunication for Educators
July 6-July 16

Computer familiarity is a recommended pre-requisite. All courses meet from 9:00 to 5:00. The cost for each course is $300 for 3 credits; $100—audit.

For more information or to reserve a place, call Emmanuel College in Boston at 735-9712

The CARROLL CENTER FOR THE BLIND in Newton is offering summer courses for visually impaired students and their teachers.

The courses for teachers are scheduled from July 13th through July 30th. The cost for each course is $225 (with one credit—$275). Courses offered are: "Introduction to Microcomputers and Adaptive Output" "Apple and Access Devices" and "IBM and Access Devices"

A one week course for blind high school students will start on August 17th. This course will cover terminology, basic word processing on the Apple with speech, large print and braille output. The cost is $250.

For applications and more information call Dina Wischkin at 617-969-6200 in the Boston area or use the Massachusetts toll free number 1-800-852-3131.

Teachers from member communities of the CHAPTER 1 COMPUTER COOPERATIVE CENTER (there are 135 member school districts) are invited to attend workshops at the Center in Framingham.

Thirteen workshops will be offered in July and August and will run from 9:00 to 3:00. Most workshops are for teachers and require no previous microcomputer experience. Three workshops are available for parents.

The workshops cover the following topics: Software Evaluation; Word Processing, Database and Spreadsheets on Appleworks; Developing Language Arts Activities with a Word Processor; Children's Publishing Programs; Parents, Kids and Computers; and Introduction to Personal Computing and Word Processing for Parents.

Although the Center primarily serves Chapter 1 teachers, administrators and parents, other individuals from member communities may attend the workshops when space is available. If you are interested in attending any of these FREE workshops, check with your Chapter 1 Director to see if your community holds a membership, inform the director you would like to attend and then call the Center for more information at (617) 788-0094 or (617) 431-1821.

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EDC and TERC: Research on integration of technology

Two Massachusetts' non-profit firms, Education Development Center (EDC) located in Newton and Technical Education Research Center (TERC) in Cambridge, were awarded a contract funded by the U.S. Department of Education, Office of Special Education Projects to investigate integration of technology for mainstreamed middle school special needs students.

EDC and TERC will conduct four related studies during the first three years of this project to build and refine a research based model of technology integration. In the final two years, if funding continues, the model will be tested and disseminated.

Four school districts across Massachusetts will be field sites in the study. Participants will include district-wide and middle school administrators, specialists and teachers from the areas of regular, special and computer education.

Special needs students who are mildly handicapped and mainstreamed for language arts and/or mathematics will be involved in the study.

In the first year a Framework for Integrating Technology (FIT) will be researched and developed. In developing FIT, software, student and teacher variables that are critical to the technology integration process will be selected, defined and validated.

Another study on-going over the three year period will involve documenting how the school districts support technology integration for special needs students and how these support systems change as the process of technology integration advances.

In the second and third years, two more studies will focus on language arts and mathematics. EDC/TERC will use an intervention and analysis approach. This approach involves: 1) introducing FIT to teachers and specialists and setting in motion procedures to implement its use; 2) documenting both how FIT and the procedures are used; and 3) examining how they affect teachers, students and district.

The success of this project depends on collaboration among teachers, specialists and administrators. In addition, an advisory panel comprised of technology specialists from industry (IBM, Apple Computer, Inc. and Sunburst Communications), education practitioners and research specialists will offer guidance throughout this project.

Research findings will be translated into practical outcomes for school systems, schools, teachers, students, as well as software publishers.

For more information contact Judith Zorfass at EDC, 55 Chapel St., Newton, MA 02160 (617) 969-7100. ■

Summer

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New Tools: Computer Technology in the Special Needs Curriculum is the title of an Institute being held at HARVARD UNIVERSITY GRADUATE SCHOOL OF EDUCATION July 20-31. This special two-week Institute will convene educators who want to increase their repertoire of tools they can use effectively in their work with special needs students.

Administrators, special education personnel and computer coordinators who attend the Institute can expect to return to their schools with a thorough knowledge of available educational software and hardware; an ability to determine when, under what conditions, and with whom to use these new tools; and a plan for integrating technology into their classrooms, schools or districts.

The tuition is $960 and if desired you may receive 4 graduate credits from Harvard.

For a registration form or more information call Magda Casineyra at (617) 495-3572. ■

Esteem

continued from page 1

microcomputer after watching a classmate use it and enjoy the outcome.

Educational software that enables the student to be the most important actor in the interaction, and the primary controller of what is happening on the screen should be used or students will often become bored and angry with educational computing.

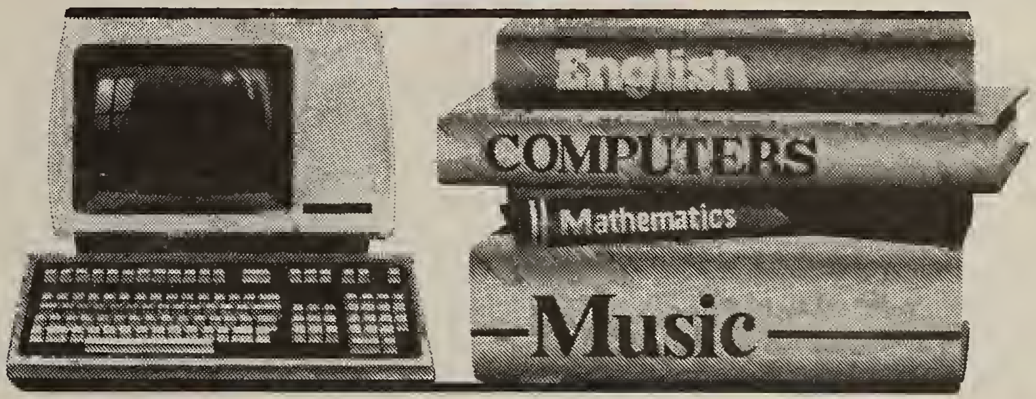
One effective program my students use is a game in which four keys are used to maneuver a helicopter. As the helicopter picks up the scrambled letters in the correct order, the student scores points. Additional points can be earned for speed in returning to the base.

Because the word lists in the program ("Spellicopter", by Designware) range from first grade to college level, and the obstacles in the "air" can be made moderately to extremely challenging, the student can increase the level of difficulty at any time.

My students also use Scholastic's "Microzine" series which provides challenging and effective software to build students' cognitive skills and self-esteem.

After observing my students on computers, I have concluded that academic performance is enhanced greatly because of potential for growth in self-esteem inherent in computer learning. ■

Siri Nam Khalsa is a Special Education Teacher and Computer Lab Coordinator of the Hampshire Educational Collaborative in South Hadley. He also leads Effective Parenting Skills workshops and adolescent self-esteem building groups.



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Name ______ Position or Title ______

School ______ Address ______

City, State, Zip ______ Telephone ______

Type of classroom or program ______

Total number students you serve ______ Number of students using computers ______

Brand(s) of computer(s) ______

Where is (are) the computer(s) located? ______

What software programs do your students use most frequently?

______

What is your evaluation of this issue of the newsletter?

Yes	No		Yes	No	
___	___	Useful	___	___	Looks good
___	___	Interesting	___	___	I like the name
___	___	Too elementary	___	___	Longer articles
___	___	Over my head	___	___	Shorter articles

Would you be willing to contribute information and/or articles for future issues of this newsletter ___ yes ___ no

LOTUS supports CABLE for the blind

The Carroll Center for the Blind located in Newton has received a grant from Lotus Corporation to provide FREE consultation and workshops.

The grant augments services of the Carroll Center's Project CABLE (Computer Access for the Blind in Education and Employment) and is for visually impaired students and their teachers who are interested in using technology in their schools.

Recommendations on adaptive devices and training are available by appointment at your school or at the Carroll Center. This offer will expire in late fall—don't wait, call today.

Under the same grant the Carroll Center is offering a one day workshop on speech, braille and large print output this fall. This workshop is also FREE to teachers (itinerant, special educators and computer educators) AND their visually impaired students.

For further information about the workshop or consultation, call Dina Wischkin at 617-969-6200 in the Boston area or use the Massachusetts toll free number 1-800-852-3131. ■

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Computers and Special Ed

A newsletter for Massachusetts special educators published by the Bureau of Program Development and Evaluation, Division of Special Education, Massachusetts Department of Education. September/October 1987

MONEYBUCKS SUCCEEDS WITH WORD PROCESSING IN HAVERHILL

Innovative Word Processing Method for Students

by Kerry L. Smith

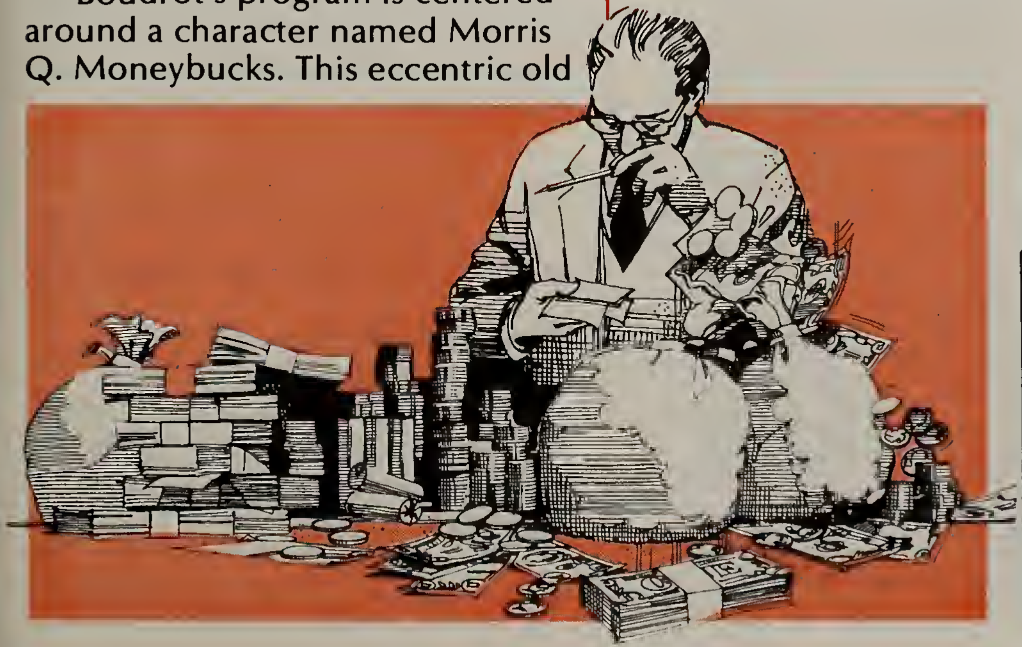
Last fall, I taught my fifth and sixth grade learning disabled students word processing using Magic Slate and the Morris Q. Moneybucks program.

Moneybucks is described in the article, "The Secrets to Teaching Word Processing or The Legacy of Morris Q. Moneybucks,"written by Thomas E. Boudrot and published in the February 1986 issue of *Teaching and Computers.*

The article was brought to my attention by Lois Gerson, Haverhill's computer specialist.

The article includes a program that can be typed into your choice of word processing, as well as eight activity cards to start your students on a fun-filled mystery tour.

Boudrot's program is centered around a character named Morris Q. Moneybucks. This eccentric old chap died, stating in his will how he wanted his possessions divided among his three children, Doris, Horace and Chloris, and their butler Max.



By interacting with the computer and the interesting Moneybucks plot, the students learned the five basic steps in word processing: file retrieval; cursor movement; text deletion; text insertion and replacement; and text creation.

My students required a lot of reinforcement and review. We spent two and sometimes three meetings on an activity originally designed for one meeting.

Students were introduced to the Moneybucks program in early October and were able to write independently by early December.

At Christmas, they wrote letters to Santa Claus that were printed in the shape of Christmas trees.

My students have written some amazing things since delving into the saga of the late M.Q. Moneybucks. Children who had difficulty writing sentences can now write one or more paragraphs on a topic.

I can honestly say I enjoyed these introductory lessons as much as my students. We had great fun with the names and characters, and the students weren't threatened or overwhelmed by the material.

They were kept so amused that I don't think they were aware they were developing a useful skill. ■

Kerry L. Smith teaches learning disabled students in Haverhill.

INSIDE:

- **Telecommunications Conference, Oct. 6**
- **Grant Writing Symposium, Oct. 8**
- **Northeast Computer Faire, Oct. 15-17**
- **Where to find state and local funds**
- **Video for fundraising available**

LOOKING FOR FUNDS IN ALL THE RIGHT PLACES

State and Local Funding Sources for Computer Technology

compiled by Catherine Tarr, Joan McNamara and Vicky Gallagher

Using a computer in the special needs classroom can help meet a wide variety of student needs. Trying to locate funds for specific projects can often be time consuming.

The following list of state and local funding sources and accompanying names and telephone numbers of Massachusetts Department of Education Regional Education Center staff should be of assistance in your quest for funds.

For further information on federal funding, consult the United States Department of Education, Title II office.

Chapter 188 has Education Technology Project grants with funding levels of up to $35,000 and mini-grants up to $5,000. There are specific guidelines, as well as deadlines for submitting these grants. For more information regarding Chapter 188 grant applications contact your Technology in Instruction (TII) committee member at your Regional Education Center or Susan Foote at the Bureau of Educational Technology, 74 Acton Street, Arlington, MA 02174, (617) 641-3710.

Technical assistance mini-grants are for special needs populations only. More information on these may be obtained by contacting the Technical Assistance Specialist (TAS) at your Regional Education Center.

Since 1981 the Commonwealth Inservice Institute (CII) has supported about 500 grants to local school districts for training teachers and administrators in the use of computers. The purpose of the CII is to encourage improvement in schools by awarding professional development grants to educators. For more information contact the CII coordinator at your Regional Education Center.

School Improvement Councils were formed as a result of the Education Reform Act and are comprised of school administrators, teachers, parents, and community members. They have discretionary funds that may be appropriated for technology projects. Contact your school principal for information on your School Improvement Council. You may also want to volunteer to serve on this committee. As a member of the School Improvement Council you may have a good chance to present your rationale for funding technology projects.

In addition you may also want to investigate private grants and corporate donations, disability specific organizations (March of Dimes, United Cerebral Palsy, etc.) or service oganizations (Lions Club, Knights of Columbus, etc.) to fund special education computer projects.

A primary source of information regarding private grants is the Associated Grantmakers Library in Boston. This library and others (there are nine locations across the state) allows access to a database of current grants offered by private companies and organizations. To obtain more information about services offered by the Grantmakers Library and for locations of a library near you, contact Philip Conoly at the Associated Grantmakers Library, 294 Washington Street, Boston, MA (617) 426-2606.

For more information on Massachusetts Department of Education grants contact:

Jennifer Unger, TAS; Stafford Peat, TII; Tim Wilson, CII at the Central Mass Regional Education Center, West Boylston (617) 835-6266

Karen Tewhey, TAS; Dave Keeler, TII or Bob Winfield, CII at the Greater Boston Regional Education Center, Arlington (617) 641-4870.

Laurie Barsanti, TAS; Amy Sosman, TII; Joan Parker, CII at the Northeast Regional Education Center, North Reading (617) 664-5723

Janet Rommel, TAS; Micki Siegel, TII; Al Trocchi, CII at the Northwest Regional Education Center, North Adams (413) 664-4511 (ask for the Regional Center extension)

Ralph Friedman, TAS; Bryna Kaufman, TII; John Geovanis, CII at the Southeast Regional Education Center, Lakeville (617) 947-1231, Ext. 445

Craig Jurgenson, TAS; Neil Davidson, TII; Pat Cote, CII at the Greater Springfield Regional Education Center, Chicopee (413) 594-8511 ■

All three authors of this article teach special needs students. Catherine Tarr and Vicky Gallagher teach in North Andover and Joan McNamara teaches in Andover.

TENTH ANNUAL NORTHEAST COMPUTER FAIRE IN BOSTON, OCTOBER 15-17

Computer Technology in Education Part of this Year's Program

Educators throughout the state will once again be able to catch a glimpse of the latest in computer technology as the tenth annual Northeast Computer Faire comes to the World Trade Center in Boston, on October 15-17, 1987.

The Faire is open to the public and show hours are from 10:00 A.M. to 6:00 P.M. on Thursday and Friday, October 15 and 16, and from 10:00 A.M. to 5:00 P.M. on Saturday, October 17.

Admission is $15.00 for all three days or $9.00 per day. A special admission price of $10.00 for all three days is being offered to those who register prior to the October 1 deadline.

Sponsored by The Interface Group, Inc. in Needham, the world's leading producer of computer and communications conferences, the tenth annual Northeast Computer Faire is geared towards computer enthusiasts and professionals alike.

The three day Faire will feature an exciting agenda of exhibits, seminars, conferences, and displays, and a series of sessions on manufacturing, engineering, medicine, banking-finance, and education.

Applications in desktop publishing, communications, accounting, business and, databases will be highlighted.

In its continued commitment to computer technology and education, Interface, Inc. has once again donated exhibit space to the Massachusetts Department of Education.

This year the Department's exhibit booth will display software tools for children and young adults and information about computer training programs for teachers.

Many brochures and hand-outs will be available describing state and local computer projects, telecommunications systems used by the Department, and funding sources for technology.

Staff from the Department will be on hand to answer questions and discuss the current role of computer technology in education.

This year's Faire will feature vendor presentations where companies will have an opportunity to explain the features and benefits of their latest products, and people will be able to ask questions about products.

There will also be a "Hands-On Demonstration Center" where people will have the chance to test-drive various software. Well over 100 exhibitors are expected to be on hand for the Faire.

"We're integrating the Faire with exhibits to help attendees solve their application problems quickly," Andrew Shapiro, assistant product marketing manager for the Interface Group said.

"To reach the enthusiasts as well as the professional user, some sessions will focus on the fun side of computer application."

For more information on the tenth annual Northeast Computer Faire in Boston on October 15-17 contact Keith F. Westerman or Cheryl Delgreco at (617) 449-6600, days or (617) 367-0554 during the evening. ■

Video Available for Fund Raising

- A blind child using a speech synthesized word processor to type reports
- A man without the use of his hands using a computer to publish newsletters
- A woman without the use of her voice communicating through a computer

These are a few of the scenes from a compelling new video presentation called "Access."

Produced by Apple Computers, Inc. in Cupertino, California, this high quality, fifteen minute video is available to borrow, free of charge, from the Division of Special Education.

The video is not intended as a technical training film, but would be useful as a brief exposure to special needs computer uses.

The video has tremendous potential as a fund-raising tool for groups seeking funds from civic groups, fraternal organizations, or school boards.

For more information on the "Access" video contact Joan Thormann at the Massachusetts Division of Special Education at (617) 770-7482. ■

OCTOBER 8 SYMPOSIUM ON GRANT WRITING IN BOXBOROUGH

Technical Assistance to Educators on Funding Sources and Grant Writing Techniques

The Public School Grantsmanship Symposium on Thursday, October 8, 1987 offers Massachusetts teachers and school administrators valuable technical assistance in successful grant writing.

The Symposium will be held from 8:00 A.M. to 4:00 P.M. at the Sheraton Boxborough Inn and Conference Center in Boxborough. Registration is $30.00.

The event is being sponsored by the Massachusetts Field Center for Teaching and Learning in Bridgewater.

"The symposium is designed to help participants identify sources of funding and write effective grant proposals," Karen O'Conner, Associate Director of the Field Center said.

"We want teachers and administrators to know what grants are available, where they are, what they're for and how to get them," O'Conner said.

◆

Over sixteen workshops are planned, along with several technical assistance sessions, all designed to enhance grant writing techniques and identify funding sources.

The workshops are for both the novice and the experienced grant writer.

Representatives from a variety of funding sources will be on hand, along with previous grant recipients, to discuss the ins and outs of grant writing.

The Massachusetts Department of Education will conduct a workshop on funding sources available through the department.

Other organizations scheduled to conduct workshops include: the National Endowment for the Humanities; The National Science Foundation; The Fullbright Foundation; Associated Grantmakers; The Cultural Education Foundation of Boston; Impact II; and the Alliance for Educators of Worcester.

For more information on the symposium contact the Massachusetts Field Center for Teaching and Learning, 63 Main Street, Bridgewater, Massachusetts, 02324 (617) 697-1592. ■

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Would you be willing to contribute information and/or articles for future issues of this newsletter ___ yes ___ no

LET'S TALK TELECOMMUNICATIONS

Telecommunications Conference, Tuesday, Oct. 6

Planning a statewide telecommunications network for educators will be the focus of a day-long working conference on Tuesday, October 6, 1987 in Boxborough, Massachusetts.

The conference will be held from 9:00 A.M. to 4:00 P.M. at the Sheraton Inn and Conference Center in Boxborough.

Registration is $25.00 per person including lunch and conference materials. Attendance is limited to 200 participants.

The conference is being sponsored by the Massachusetts Corporation for Educational Telecommunications (MCET) in Boston.

A broad range of interests will be represented at the conference including K-12 school systems, higher education, libraries, state agencies, legislators, and industry.

For more information contact Abbie Goodman at MCET at (617) 439-5888 or Roxanne Medrinos at the Westwood Public Schools at (617) 359-7337. ■

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